



RECEIVED
OCT 03 2001

TECH CENTER 1600/2900

7029.ST25.txt
SEQUENCE LISTING

<110> DuPont Pharmaceuticals Company

<120> Use of the KCNQ2 and KCNQ3 Genes for the Discovery of Agents Useful in the Treatment of Neurological Disorders

<130> DM-7029

<140> US 09/454,868

<141> 1999-12-03

<150> US 60/110,804

<151> 1998-12-03

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<170> PatentIn version 3.0

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7029.ST25.txt

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35 40 45

Lys Arg Gly Ser Ile Leu Ser Lys Pro Arg Ala Gly Gly Ala Gly Ala
50 55 60

Gly Lys Pro Pro Lys Arg Asn Ala Phe Tyr Arg Lys Leu Gln Asn Phe
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Leu Tyr Asn Val Leu Glu Arg Pro Arg Gly Trp Ala Phe Ile Tyr His
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7029.ST25.txt

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Ser Thr Ile Lys Glu Tyr Glu Lys Ser Ser Glu Gly Ala Leu Tyr Ile
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Leu Glu Ile Val Thr Ile Val Val Phe Gly Val Glu Tyr Phe Val Arg
 130 135 140

Ile Trp Ala Ala Gly Cys Cys Cys Arg Tyr Arg Gly Trp Arg Gly Arg
 145 150 155 160

Leu Lys Phe Ala Arg Lys Pro Phe Cys Val Ile Asp Ile Met Val Leu
 165 170 175

Ile Ala Ser Ile Ala Val Leu Ala Ala Gly Ser Gln Gly Asn Val Phe
 180 185 190

Ala Thr Ser Ala Leu Arg Ser Leu Arg Phe Leu Gln Ile Leu Arg Met
 195 200 205

Ile Arg Met Asp Arg Arg Gly Gly Thr Trp Lys Leu Leu Gly Ser Val
 210 215 220

Val Tyr Ala His Ser Lys Glu Leu Val Thr Ala Trp Tyr Ile Gly Phe
 225 230 235 240

Leu Cys Leu Ile Leu Ala Ser Phe Leu Val Tyr Leu Ala Glu Lys Gly
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Glu Asn Asp His Phe Asp Thr Tyr Ala Asp Ala Leu Trp Trp Gly Leu
 260 265 270

Ile Thr Leu Thr Thr Ile Gly Tyr Gly Asp Lys Tyr Pro Gln Thr Trp
 275 280 285

Asn Gly Arg Leu Leu Ala Ala Thr Phe Thr Leu Ile Gly Val Ser Phe
 290 295 300

Phe Ala Leu Pro Ala Gly Ile Leu Gly Ser Gly Phe Ala Leu Lys Val
 305 310 315 320

Gln Glu Gln His Arg Gln Lys His Phe Glu Lys Arg Arg Asn Pro Ala
 325 330 335

Ala Gly Leu Ile Gln Ser Ala Trp Arg Phe Xaa Ala Thr Asn Leu Ser
 340 345 350

Arg Thr Asp Leu His Ser Thr Trp Gln Tyr Tyr Glu Arg Thr Val Thr
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7029.ST25.txt

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Lys Gly Ser Pro Cys Arg Gly Pro Leu Cys Gly Cys Cys Pro Gly Arg
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Ser Ser Gln Lys Val Ser Leu Lys Asp Arg Val Phe Ser Ser Pro Arg
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Gly Val Ala Ala Lys Gly Lys Gly Ser Pro Gln Ala Gln Thr Val Arg
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Arg Ser Pro Ser Ala Asp Gln Ser Leu Glu Asp Ser Pro Ser Lys Val
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Pro Lys Ser Trp Ser Phe Gly Asp Arg Ser Arg Ala Arg Gln Ala Phe
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Arg Ile Lys Gly Ala Ala Ser Arg Gln Asn Ser Glu Glu Ala Ser Leu
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Pro Gly Glu Asp Ile Val Asp Asp Lys Ser Cys Pro Cys Glu Phe Val
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Thr Glu Asp Leu Thr Pro Gly Leu Lys Val Ser Ile Arg Ala Val Cys
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Asp Met Leu Ser Arg Ile Lys Ser Leu Gln Ser Arg Val Asp Gln Ile
 580 585 590

Val Gly Arg Gly Pro Ala Ile Thr Asp Lys Asp Arg Thr Lys Gly Pro
 595 600 605

Ala Glu Ala Glu Leu Pro Glu Asp Pro Ser Met Met Gly Arg Leu Gly
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Lys Val Glu Lys Gln Val Leu Ser Met Glu Lys Lys Leu Asp Phe Leu
 625 630 635 640

Val Asn Ile Tyr Met Gln Arg Met Gly Ile Pro Pro Thr Glu Thr Glu

7029.ST25.txt

645

650

655

Ala Tyr Phe Gly Ala Lys Glu Pro Glu Pro Ala Pro Pro Tyr His Ser
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Pro Glu Asp Ser Arg Glu His Val Asp Arg His Gly Cys Ile Val Lys
 675 680 685

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 690 695 700

Pro Ala Ala Pro Pro Val Gln Cys Pro Pro Ser Thr Ser Trp Gln Pro
 705 710 715 720

Gln Ser His Pro Arg Gln Gly His Gly Thr Ser Pro Val Gly Asp His
 725 730 735

Gly Ser Leu Val Arg Ile Pro Pro Pro Ala His Glu Arg Ser Leu
 740 745 750

Ser Ala Tyr Gly Gly Asn Arg Ala Ser Met Glu Phe Leu Arg Gln
 755 760 765

Glu Asp Thr Pro Gly Cys Arg Pro Pro Glu Gly Asn Leu Arg Asp Ser
 770 775 780

Asp Thr Ser Ile Ser Ile Pro Ser Val Asp His Glu Glu Leu Glu Arg
 785 790 795 800

Ser Phe Ser Gly Phe Ser Ile Ser Gln Ser Lys Glu Asn Leu Asp Ala
 805 810 815

Leu Asn Ser Cys Tyr Ala Ala Val Ala Pro Cys Ala Lys Val Arg Pro
 820 825 830

Tyr Ile Ala Glu Gly Glu Ser Asp Thr Asp Ser Asp Leu Cys Thr Pro
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<213> Homo sapiens

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Ser	Thr	Ile	Lys	Glu	Tyr	Glu	Lys	Ser	Ser	Glu	Gly	Ala	Leu	Tyr	Ile
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Ile	Trp	Ala	Ala	Gly	Cys	Cys	Arg	Tyr	Arg	Gly	Trp	Arg	Gly	Arg	
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Phe Ala Leu Pro Ala Gly Ile Leu Gly Ser Gly Phe Ala Leu Lys Val
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Ile Pro Pro Leu Asn Gln Leu Glu Leu Leu Arg Asn Leu Lys Ser Lys
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Phe Val Thr Glu Asp Leu Thr Pro Gly Leu Lys Val Ser Ile Arg Ala
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Val Cys Val Met Arg Phe Leu Val Ser Lys Arg Lys Phe Lys Glu Ser
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7029.ST25.txt

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His Leu Asp Met Leu Ser Arg Ile Lys Ser Leu Gln Ser Arg Val Asp
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Gln Ile Val Gly Arg Gly Pro Ala Ile Thr Asp Lys Asp Arg Thr Lys
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Gly Pro Ala Glu Ala Glu Leu Pro Glu Asp Pro Ser Met Met Gly Arg
 580 585 590

Leu Gly Lys Val Glu Lys Gln Val Leu Ser Met Glu Lys Lys Leu Asp
 595 600 605

Phe Leu Val Asn Ile Tyr Met Gln Arg Met Gly Ile Pro Pro Thr Glu
 610 615 620

Thr Glu Ala Tyr Phe Gly Ala Lys Glu Pro Glu Pro Ala Pro Pro Tyr
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His Ser Pro Glu Asp Ser Arg Glu His Val Asp Arg His Gly Cys Ile
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Gln Pro Gln Ser His Pro Arg Gln Gly His Gly Thr Ser Pro Val Gly
 690 695 700

Asp His Gly Ser Leu Val Arg Ile Pro Pro Pro Ala His Glu Arg
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Arg Pro Tyr Ile Ala Glu Gly Glu Ser Asp Thr Asp Ser Asp Leu Cys

7029.ST25.txt

805

810

815

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7029.ST25.txt

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7029.ST25.txt

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Pro	Val	Lys	Arg	Asn	Asn	Ala	Lys	Tyr	Arg	Arg	Ile	Gln	Thr	Leu	Ile
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Leu	Val	Phe	Leu	Ile	Val	Leu	Gly	Cys	Leu	Ile	Leu	Ala	Val	Leu	Thr
					85				90					95	
Thr	Phe	Lys	Glu	Tyr	Glu	Thr	Val	Ser	Gly	Asp	Trp	Leu	Leu	Leu	Leu
					100			105				110			
Glu	Thr	Phe	Ala	Ile	Phe	Ile	Phe	Gly	Ala	Glu	Phe	Ala	Leu	Arg	Ile
					115			120				125			
Trp	Ala	Ala	Gly	Cys	Cys	Cys	Arg	Tyr	Lys	Gly	Trp	Arg	Gly	Arg	Leu
					130			135				140			
Lys	Phe	Ala	Arg	Lys	Pro	Leu	Cys	Met	Leu	Asp	Ile	Phe	Val	Leu	Ile
					145			150			155			160	
Ala	Ser	Val	Pro	Val	Val	Ala	Val	Gly	Asn	Gln	Gly	Asn	Val	Leu	Ala
					165				170				175		
Thr	Ser	Leu	Arg	Ser	Leu	Arg	Phe	Leu	Gln	Ile	Leu	Arg	Met	Leu	Arg
					180				185				190		
Met	Asp	Arg	Arg	Gly	Gly	Thr	Trp	Lys	Leu	Leu	Gly	Ser	Ala	Ile	Cys
					195			200				205			
Ala	His	Ser	Lys	Glu	Leu	Ile	Thr	Ala	Trp	Tyr	Ile	Gly	Phe	Leu	Thr
					210				215			220			
Leu	Ile	Leu	Ser	Ser	Phe	Leu	Val	Tyr	Leu	Val	Glu	Lys	Asp	Val	Pro
					225			230			235			240	
Glu	Val	Asp	Ala	Gln	Gly	Glu	Glu	Met	Lys	Glu	Glu	Phe	Glu	Thr	Tyr
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7029.ST25.txt

Ala Asp Ala Leu Trp Trp Gly Leu Ile Thr Leu Ala Thr Ile Gly Tyr
 260 265 270

Gly Asp Lys Thr Pro Lys Thr Trp Glu Gly Arg Leu Ile Ala Ala Thr
 275 280 285

Phe Ser Leu Ile Gly Val Ser Phe Phe Ala Leu Pro Ala Gly Ile Leu
 290 295 300

Gly Ser Gly Leu Ala Leu Lys Val Gln Glu Gln His Arg Gln Lys His
 305 310 315 320

Phe Glu Lys Arg Arg Lys Pro Ala Ala Glu Leu Ile Gln Ala Ala Trp
 325 330 335

Arg Tyr Tyr Ala Thr Asn Pro Asn Arg Ile Asp Leu Val Ala Thr Trp
 340 345 350

Arg Phe Tyr Glu Ser Val Val Ser Phe Pro Phe Phe Arg Lys Glu Gln
 355 360 365

Leu Glu Ala Ala Ser Ser Gln Lys Leu Gly Leu Leu Asp Arg Val Arg
 370 375 380

Leu Ser Asn Pro Arg Gly Ser Asn Thr Lys Gly Lys Leu Phe Thr Pro
 385 390 395 400

Leu Asn Val Asp Ala Ile Glu Glu Ser Pro Ser Lys Glu Pro Lys Pro
 405 410 415

Val Gly Leu Asn Asn Lys Glu Arg Phe Arg Thr Ala Phe Arg Met Lys
 420 425 430

Ala Tyr Ala Phe Trp Gln Ser Ser Glu Asp Ala Gly Thr Gly Asp Pro
 435 440 445

Met Ala Glu Asp Arg Gly Tyr Gly Asn Asp Phe Pro Ile Glu Asp Met
 450 455 460

Ile Pro Thr Leu Lys Ala Ala Ile Arg Ala Val Arg Ile Leu Gln Phe
 465 470 475 480

Arg Leu Tyr Lys Lys Phe Lys Glu Thr Leu Arg Pro Tyr Asp Val
 485 490 495

Lys Asp Val Ile Glu Gln Tyr Ser Ala Gly His Leu Asp Met Leu Ser
 500 505 510

Arg Ile Lys Tyr Leu Gln Thr Arg Ile Asp Met Ile Phe Thr Pro Gly
 515 520 525

Pro Pro Ser Thr Pro Lys His Lys Lys Ser Gln Lys Gly Ser Ala Phe

7029.ST25.txt

530	535	540
Thr Phe Pro Ser Gln Gln Ser Pro Arg Asn Glu Pro Tyr Val Ala Arg		
545	550	555
Pro Ser Thr Ser Glu Ile Glu Asp Gln Ser Met Met Gly Lys Phe Val		
565	570	575
Lys Val Glu Arg Gln Val Gln Asp Met Gly Lys Lys Leu Asp Phe Leu		
580	585	590
Val Asp Met His Met Gln His Met Glu Arg Leu Gln Val Gln Val Thr		
595	600	605
Glu Tyr Tyr Pro Thr Lys Gly Thr Ser Ser Pro Ala Glu Ala Glu Lys		
610	615	620
Lys Glu Asp Asn Arg Tyr Ser Asp Leu Lys Thr Ile Ile Cys Asn Tyr		
625	630	635
Ser Glu Thr Gly Pro Pro Glu Pro Pro Tyr Ser Phe His Gln Val Thr		
645	650	655
Ile Asp Lys Val Ser Pro Tyr Gly Phe Phe Ala His Asp Pro Val Asn		
660	665	670
Leu Pro Arg Gly Gly Pro Ser Ser Gly Lys Val Gln Ala Thr Pro Pro		
675	680	685
Ser Ser Ala Thr Thr Tyr Val Glu Arg Pro Thr Val Leu Pro Ile Leu		
690	695	700
Thr Leu Leu Asp Ser Arg Val Ser Cys His Ser Gln Ala Asp Leu Gln		
705	710	715
Gly Pro Tyr Ser Asp Arg Ile Ser Pro Arg Gln Arg Arg Ser Ile Thr		
725	730	735
Arg Asp Ser Asp Thr Pro Leu Ser Leu Met Ser Val Asn His Glu Glu		
740	745	750
Leu Glu Arg Ser Pro Ser Gly Phe Ser Ile Ser Gln Asp Arg Asp Asp		
755	760	765
Tyr Val Phe Gly Pro Asn Gly Gly Ser Ser Trp Met Arg Glu Lys Arg		
770	775	780
Tyr Leu Ala Glu Gly Glu Thr Asp Thr Asp Thr Asp Pro Phe Thr Pro		
785	790	795
800		
Ser Gly Ser Met Pro Leu Ser Ser Thr Gly Asp Gly Ile Ser Asp Ser		
805	810	815

7029.ST25.txt

Val Trp Thr Pro Ser Asn Lys Pro Ile
820 825

<210> 6
<211> 2766
<212> DNA
<213> Rattus norvegicus

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120

cggccctcg tccacgtacc ccaagcgctc cttcttcccg gagcagcagc ggagaaggcg
180

aagcgccccag tgggggcgag gcagatgggg ctcaaggctc gcagggcatc gggctcctgg
240

caaagacccc cctgagccgt ccagttaaga ggaacaacgc caagtacagg cgcatccaaa
300

ctttgatcta tgacgcccgt gagagaccga ggggctgggc gctgctctac cacgcgttg
360

tgttcctgat tgtcctggga tgcttgattc tggccgtgct caccacttc aaggagttatg
420

agactgtgtc tggagactgg ctttgctgc tggaaacatt tgctatttc atctttggag
480

ctgagttgc tttgaggatac tgggctgcag gatgttgctg tcgataaaaa ggctggcgtg
540

gacggctgaa gtttgcagg aagccctgt gcatgttggaa tatcttcgtg ctgattgctt
600

ctgtgccagt ggttgcgtg ggaaaccagg gcaatgtcct ggctacactt ctgcgaagcc
660

tccgcttcct gcagatcctg cgcatgcttc gaatggatag gaggggtggc acctggaagc
720

tcctgggctc agctatctgt gcccacagca aagaactcat caccgcctgg tacatcggt
780

tcctgacact catcctttct tcatttcttgc tctacctggt ggagaaggat gtgccagaga
840

7029.ST25.txt

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ggggcctgat cacactggcc accattggtt atggagacaa gacacctaata acctggaaag
960

gacgtctgat tgctgccacc ttttcttaa tcggcgatc ctttttgct cttccggcag
1020

gcattcctgg ctcaggactg gcattgaagg ttcaggaaca gcaccgtcag aagcactttg
1080

agaagagaag gaagccagct gctgaactca tccaggctgc ctggagatata tatgctacca
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1200

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1260

gggttcgcct ttctaatcct cgtggtagca atactaaagg aaagcttattt acccctctga
1320

atgttagatgc catagaagaa agcccttcca aagagccaaa gcccgttggc ttaaacaata
1380

aagagcgttt ccgcaccgccc ttccgcattga aagcctacgc tttctggcag agttctgaag
1440

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1500

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1620

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1680

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1800

ccacatcaga aactgaagac caaagcatga tggggaaatgtt tgtaaaagtt gaaagacagg
1860

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7029.ST25.txt

1920

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1980

gggagaagaa agaggacaac aggtattctg acttgaaaac catcatctgt aactactcag
2040

aatcaggccc ccccgaccca ccctacagct tccaccaggt gcccatcgac agagttggtc
2100

cctatgggtt tttgcacat gacccgtga aactgaccag agggggaccc agttctacaa
2160

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2220

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2280

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2340

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2400

tctcccaaga cagagatgat tatgtatgg gccccagtgg gggttcgagc tggatgaggg
2460

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2520

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2580

acaagcccac ttagaagggg tcactggctg actcctggta ctgtagtcag actttgtaca
2640

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2700

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2760

tgtcac
2766

<210> 7
<211> 835
<212> PRT
<213> Rattus norvegicus

7029.ST25.txt

<400> 7

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Arg Thr Pro Ser Ala Pro Ser Ser Arg Ser Ser Gly Glu Gly Glu
20 25 30

Ala Pro Ser Gly Gly Glu Ala Asp Gly Ala Gln Gly Ser Gln Gly Ile
35 40 45

Gly Leu Leu Ala Lys Thr Pro Leu Ser Arg Pro Val Lys Arg Asn Asn
50 55 60

Ala Lys Tyr Arg Arg Ile Gln Thr Leu Ile Tyr Asp Ala Leu Glu Arg
65 70 75 80

Pro Arg Gly Trp Ala Leu Leu Tyr His Ala Leu Val Phe Leu Ile Val
85 90 95

Leu Gly Cys Leu Ile Leu Ala Val Leu Thr Thr Phe Lys Glu Tyr Glu
100 105 110

Thr Val Ser Gly Asp Trp Leu Leu Leu Glu Thr Phe Ala Ile Phe
115 120 125

Ile Phe Gly Ala Glu Phe Ala Leu Arg Ile Trp Ala Ala Gly Cys Cys
130 135 140

Cys Arg Tyr Lys Gly Trp Arg Gly Arg Leu Lys Phe Ala Arg Lys Pro
145 150 155 160

Leu Cys Met Leu Asp Ile Phe Val Leu Ile Ala Ser Val Pro Val Val
165 170 175

Ala Val Gly Asn Gln Gly Asn Val Leu Ala Thr Ser Leu Arg Ser Leu
180 185 190

Arg Phe Leu Gln Ile Leu Arg Met Leu Arg Met Asp Arg Arg Gly Gly
195 200 205

Thr Trp Lys Leu Leu Gly Ser Ala Ile Cys Ala His Ser Lys Glu Leu
210 215 220

Ile Thr Ala Trp Tyr Ile Gly Phe Leu Thr Leu Ile Leu Ser Ser Phe
225 230 235 240

Leu Val Tyr Leu Val Glu Lys Asp Val Pro Glu Met Asp Ala Gln Gly
245 250 255

Glu Glu Met Lys Glu Glu Phe Glu Thr Tyr Ala Asp Ala Leu Trp Trp

7029.ST25.txt

260 265 270

Gly Leu Ile Thr Leu Ala Thr Ile Gly Tyr Gly Asp Lys Thr Pro Lys
 275 280 285

Thr Trp Glu Gly Arg Leu Ile Ala Ala Thr Phe Ser Leu Ile Gly Val
 290 295 300

Ser Phe Phe Ala Leu Pro Ala Gly Ile Leu Gly Ser Gly Leu Ala Leu
 305 310 315 320

Lys Val Gln Glu Gln His Arg Gln Lys His Phe Glu Lys Arg Arg Lys
 325 330 335

Pro Ala Ala Glu Leu Ile Gln Ala Ala Trp Arg Tyr Tyr Ala Thr Asn
 340 345 350

Pro Asn Arg Leu Asp Leu Val Ala Thr Trp Arg Phe Tyr Glu Ser Val
 355 360 365

Val Ser Phe Pro Phe Phe Arg Lys Glu Gln Leu Glu Ala Ala Ala Ser
 370 375 380

Gln Lys Leu Gly Leu Leu Asp Arg Val Arg Leu Ser Asn Pro Arg Gly
 385 390 395 400

Ser Asn Thr Lys Gly Lys Leu Phe Thr Pro Leu Asn Val Asp Ala Ile
 405 410 415

Glu Glu Ser Pro Ser Lys Glu Pro Lys Pro Val Gly Leu Asn Asn Lys
 420 425 430

Glu Arg Phe Arg Thr Ala Phe Arg Met Lys Ala Tyr Ala Phe Trp Gln
 435 440 445

Ser Ser Glu Asp Ala Gly Thr Gly Asp Pro Met Thr Glu Asp Arg Gly
 450 455 460

Tyr Gly Asn Asp Phe Leu Ile Glu Asp Met Ile Pro Thr Leu Lys Ala
 465 470 475 480

Ala Ile Arg Ala Val Arg Ile Leu Gln Phe Arg Leu Tyr Lys Lys Lys
 485 490 495

Phe Lys Glu Thr Leu Arg Pro Tyr Asp Val Lys Asp Val Ile Glu Gln
 500 505 510

Tyr Ser Ala Gly His Leu Asp Met Leu Ser Arg Ile Lys Tyr Leu Gln
 515 520 525

Thr Arg Ile Asp Met Ile Phe Thr Pro Gly Pro Pro Ser Thr Pro Lys
 530 535 540

7029.ST25.txt

His Lys Lys Ser Gln Lys Gly Ser Ala Phe Thr Tyr Pro Ser Gln Gln
545 550 555 560

Ser Pro Arg Asn Glu Pro Tyr Val Ala Arg Ala Ala Thr Ser Glu Thr
565 570 575

Glu Asp Gln Ser Met Met Gly Lys Phe Val Lys Val Glu Arg Gln Val
580 585 590

His Asp Met Gly Lys Lys Leu Asp Phe Leu Val Asp Met His Met Gln
595 600 605

His Met Glu Arg Leu Gln Val Arg Val Thr Glu Tyr Tyr Pro Thr Lys
610 615 620

Gly Ala Ser Ser Pro Ala Glu Gly Glu Lys Lys Glu Asp Asn Arg Tyr
625 630 635 640

Ser Asp Leu Lys Thr Ile Ile Cys Asn Tyr Ser Glu Ser Gly Pro Pro
645 650 655

Asp Pro Pro Tyr Ser Phe His Gln Val Pro Ile Asp Arg Val Gly Pro
660 665 670

Tyr Gly Phe Phe Ala His Asp Pro Val Lys Leu Thr Arg Gly Gly Pro
675 680 685

Ser Ser Thr Lys Ala Gln Ala Asn Leu Pro Ser Ser Gly Ser Thr Tyr
690 695 700

Ala Glu Arg Pro Thr Val Leu Pro Ile Leu Thr Leu Leu Asp Ser Cys
705 710 715 720

Val Ser Tyr His Ser Gln Thr Glu Leu Gln Gly Pro Tyr Ser Asp His
725 730 735

Ile Ser Pro Arg Gln Arg Arg Ser Ile Thr Arg Asp Ser Asp Thr Pro
740 745 750

Leu Ser Leu Met Ser Val Asn His Glu Glu Leu Glu Arg Ser Pro Ser
755 760 765

Gly Phe Ser Ile Ser Gln Asp Arg Asp Asp Tyr Val Phe Gly Pro Ser
770 775 780

Gly Gly Ser Ser Trp Met Arg Glu Lys Arg Tyr Leu Ala Glu Gly Glu
785 790 795 800

Thr Asp Thr Asp Thr Asp Pro Phe Thr Pro Ser Gly Ser Met Pro Met
805 810 815

7029.ST25.txt

Ser Ser Thr Gly Asp Gly Ile Ser Asp Ser Ile Trp Thr Pro Ser Asn
820 825 830

Lys Pro Thr
835

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240

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420

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540

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720

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7029.ST25.txt

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960

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1860

7029.ST25.txt

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2880

7029.ST25.txt

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7029.ST25.txt

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4200

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4380

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4920

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4980

7029.ST25.txt

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5100

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Asp Ser Thr Arg Asp Gly Ala Leu Leu Ile Ala Gly Ser Glu Ala Pro
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Lys Arg Gly Ser Val Leu Ser Lys Pro Arg Thr Gly Gly Ala Gly Ala

7029.ST25.txt

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Gly Lys Pro Pro Lys Arg Asn Ala Phe Tyr Arg Lys Leu Gln Asn Phe
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Leu Tyr Asn Val Leu Glu Arg Pro Arg Gly Trp Ala Phe Ile Tyr His
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Ala Tyr Val Phe Leu Leu Val Phe Ser Cys Leu Val Leu Ser Val Phe
 100 105 110

Ser Thr Ile Lys Glu Tyr Glu Lys Ser Ser Glu Gly Ala Leu Tyr Ile
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Leu Glu Ile Val Thr Ile Val Val Phe Gly Val Glu Tyr Phe Val Arg
 130 135 140

Ile Trp Ala Ala Gly Cys Cys Cys Arg Tyr Arg Gly Trp Arg Gly Arg
 145 150 155 160

Leu Lys Phe Ala Arg Lys Pro Phe Cys Val Ile Asp Ile Met Val Leu
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Ile Ala Ser Ile Ala Val Leu Ala Ala Gly Ser Gln Gly Asn Val Phe
 180 185 190

Ala Thr Ser Ala Leu Arg Ser Leu Arg Phe Leu Gln Ile Leu Arg Met
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Ile Arg Met Asp Arg Arg Gly Gly Thr Trp Lys Leu Leu Gly Ser Val
 210 215 220

Val Tyr Ala His Ser Lys Glu Leu Val Thr Ala Trp Tyr Ile Gly Phe
 225 230 235 240

Leu Cys Leu Ile Leu Ala Ser Phe Leu Val Tyr Leu Ala Glu Lys Gly
 245 250 255

Glu Asn Asp His Phe Asp Thr Tyr Ala Asp Ala Leu Trp Trp Gly Leu
 260 265 270

Ile Thr Leu Thr Thr Ile Gly Tyr Gly Asp Lys Tyr Pro Gln Thr Trp
 275 280 285

Asn Gly Arg Leu Leu Ala Ala Thr Phe Thr Leu Ile Gly Val Ser Phe
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Phe Ala Leu Pro Ala Gly Ile Leu Gly Ser Gly Phe Ala Leu Lys Val
 305 310 315 320

Gln Glu Gln His Arg Gln Lys His Phe Glu Lys Arg Arg Asn Pro Ala
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7029.ST25.txt

Ala Gly Leu Ile Gln Ser Ala Trp Arg Phe Tyr Ala Thr Asn Leu Ser
340 345 350

Arg Thr Asp Leu His Ser Thr Trp Gln Tyr Tyr Glu Arg Thr Val Thr
355 360 365

Val Pro Met Ile Ser Ser Gln Thr Gln Thr Tyr Gly Ala Ser Arg Leu
370 375 380

Ile Pro Pro Leu Asn Gln Leu Glu Met Leu Arg Asn Leu Lys Ser Lys
385 390 395 400

Ser Gly Leu Thr Phe Arg Lys Glu Pro Gln Pro Glu Pro Ser Pro Ser
405 410 415

Gln Lys Val Ser Leu Lys Asp Arg Val Phe Ser Ser Pro Arg Gly Val
420 425 430

Ala Ala Lys Gly Lys Gly Ser Pro Gln Ala Gln Thr Val Arg Arg Ser
435 440 445

Pro Ser Ala Asp Gln Ser Leu Asp Asp Ser Pro Ser Lys Val Pro Lys
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Ser Trp Ser Phe Gly Asp Arg Ser Arg Ala Arg Gln Ala Phe Arg Ile
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Lys Gly Ala Ala Ser Arg Gln Asn Ser Glu Glu Ala Ser Leu Pro Gly
485 490 495

Glu Asp Ile Val Glu Asp Asn Lys Ser Cys Asn Cys Glu Phe Val Thr
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Glu Asp Leu Thr Pro Gly Leu Lys Val Ser Ile Arg Ala Val Cys Val
515 520 525

Met Arg Phe Leu Val Ser Lys Arg Lys Phe Lys Glu Ser Leu Arg Pro
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Tyr Asp Val Met Asp Val Ile Glu Gln Tyr Ser Ala Gly His Leu Asp
545 550 555 560

Met Leu Ser Arg Ile Lys Ser Leu Gln Ser Arg Val Asp Gln Ile Val
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Val Glu Lys Gln Val Leu Ser Met Glu Lys Lys Leu Asp Phe Leu Val
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Glu Asp Ser Arg Asp His Ala Asp Lys His Gly Cys Ile Ile Lys Ile
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Val Arg Ser Thr Ser Ser Thr Gly Gln Arg Lys Tyr Ala Ala Pro Pro
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Val Met Pro Pro Ala Glu Cys Pro Pro Ser Thr Ser Trp Gln Gln Ser
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His Gln Arg His Gly Thr Ser Pro Val Gly Asp His Gly Ser Leu Val
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Arg Ile Pro Pro Pro Pro Ala His Glu Arg Ser Leu Ser Ala Tyr Ser
725 730 735

Gly Gly Asn Arg Ala Ser Thr Glu Phe Leu Arg Leu Glu Gly Thr Pro
740 745 750

Ala Cys Arg Pro Ser Glu Ala Ala Leu Arg Asp Ser Asp Thr Ser Ile
755 760 765

Ser Ile Pro Ser Val Asp His Glu Glu Leu Glu Arg Ser Phe Ser Gly
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Phe Ser Ile Ser Gln Ser Lys Glu Asn Leu Asn Ala Leu Ala Ser Cys
785 790 795 800

Tyr Ala Ala Val Ala Pro Cys Ala Lys Val Arg Pro Tyr Ile Ala Glu
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